

## A Hospital Based Prospective Observational Evaluation of Adolescent Abnormal Uterine Bleeding (AUB) and its Outcome

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### Abstract

**Aim:** Study of adolescent abnormal uterine bleeding (AUB) and its outcome.

**Methods:** This prospective observational study was carried out in the Department of Obstetrics and Gynaecology, JLNMC, Bhagalpur, Bihar, India for 12 months. After taking the approval of the protocol review committee and institutional ethics committee. All OPD patients attending gynaecology clinics present with AUB. Age group 10-19 years were included in this study.

**Results:** 86% patients were in AU-O class followed by 7% in AUB-N, 3% in AUB-C, 0% in AUB-I, 1% in AUB-L and AUB-P class. According to PALM 1% and COEIN 99%.

**Conclusion:** The study concluded that Menorrhagia in adolescents can be caused by a number of conditions, the most common being the immature hypothalamic-pituitary-ovarian axis. Assessment of each case with thorough history, physical examination, and laboratory investigation is crucial in reaching the diagnosis. We see that we can successfully apply the COEIN approach to adolescent AUB. Anatomical abnormalities like fibroid or polyp are also to be ruled out.

**Keywords:** Adolescent abnormal, AUB, gynaecologic, bleeding occurring

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### Introduction

The term Adolescence, derived from Latin word "adolescere" is the growing up period between childhood and maturity [1]. It is characterized by a set of development changes in physical maturation, psychological adjustment and social relations. WHO defines adolescent as a group of the youth in the age group of 10-

19 years, who form an important segment of society [2].

Gynecologic problems of adolescent occupy a special space in the spectrum of gynaecologic disorders of all ages. Menstrual disorders and abnormal uterine bleeding (AUB) are among the most frequent gynecologic complaints of

adolescents [3,4]. Abnormal uterine bleeding (AUB) is a term coined to incorporate bleeding that is excessive or occurs outside of normal cyclic menstruation [5]. Its importance lies in the fact that AUB has a major impact on women's quality of life, productivity and utilization of healthcare services [6].

A revised terminology system was introduced in 2011 by the International Federation of Gynecology and Obstetrics (FIGO) to approach AUB in non-pregnant reproductive age women [7]. This classification system was referred to by the acronym PALM-COEIN. The system was developed by FIGO Menstrual Disorders Group (FMDG) with contribution from an international group of both clinical and non-clinical investigators from 17 countries on six continents. It was developed to have standardized nomenclature and to abandon terms like menorrhagia, metrorrhagia and DUB [8].

### Material and methods

This prospective observational study was carried out in the Department of Obstetrics and Gynaecology, JLNMCH, Bhagalpur, Bihar, India for 12 months, after taking the approval of the protocol review committee and institutional ethics committee.

### Inclusion Criteria

- All OPD patients attending gynaecology clinics present with AUB.
- Age group 10-19 years

### Exclusion Criteria

- Pregnancy,
- Below 10 year and above 19-year girls,
- Non menstrual complaints like Primary amenorrhoea, dysmenorrhoea
- Genital's injuries

### Methodology:

History (history was taken from parents/guardian (whenever required in

addition to patients) History should be taken from both with and without the parents. History included menstrual history (age of menarche, regularity, duration, number of pads/tampons per day), sexual history, past medical history (systemic illness, current/recent medication), systemic review (symptoms associated with systemic causes of HMB such as obesity, PCOS, hypothyroidism, hyperprolactinemia, hypothalamic or adrenal disorder) and family history (coagulopathy, hormone sensitive cancers). History of heavy menses since menarche, surgery related bleeding, bleeding associated with dental work, bruising or epistaxis one to two times per month, frequent gum bleeding and bleeding symptoms in family point an underlying bleeding disorder. Then a thorough clinical examination was performed which included general survey, systemic and gynaecological examination. (Whenever applicable). Detailed general physical and systemic examination was done after informed verbal consent from the patient and her accompanying guardian. Finally, girls with complaints of heavy period, irregular cycles and oligomenorrhoea (AUB) formed the study group.

Complete blood count, PT/aPTT, kidney function test, liver function test and random blood sugar and Thyroid Function Test (TFT) were done in all girls. If PT/aPTT was deranged, then further coagulation profile was done. Trans abdominal ultrasonography (USG) was done in MRI and CT were also done whenever needed. In suspected PCOS cases and girls with obesity, oligomenorrhoea and hirsutism additional tests like Follicle Stimulating Hormone (FSH), Leutinizing Hormone (LH), Serum Prolactin level, Free Testosterone and insulin

Prevalence of menstrual disorder in adolescent was calculated management and of cases according to FIGO guideline was done.

Treatment of AUB would be based on underlying etiologic and severity of bleeding.

Evaluation of menstrual blood loss was assessed using the pictorial blood assessment chart (PBLAC).

## Results

**Table 1:** Distribution of patients according to duration of menstrual flow

Duration Of Menstrual Flow	No. of Patients	Percentage
<3	73	73
3-5	22	22
>5	27	27
Total	100	100

**Table 2:** Distribution according to complaints

Chief Complaints	No. of Patients	%
Absent Menstrual Bleeding(amenorrhea)	17	17
Painful menstruation	5	5
Heavy Menstrual Bleeding	31	31
Irregular Menstrual Bleeding(oligomenorrhea)	21	21
Pain Abdomen	16	16
Vaginal Discharge	10	10
Total	100	100

**Table 3:** Distribution of patients according to Pattern of bleeding (according to FIGO guideline)

Pattern of bleeding	No. of Patients	%	
Infrequent (one or two episode in a 90 days periods)	Heavy	47	47
	Light	11	11
Frequent (more than four episodes in a 90 days periods)	Heavy	04	04
	Light	13	13
Irregular(variation >20 days over a periods of one year)	Mild	05	05
	moderate	09	09
	severe	05	05
Intermenstrual bleeding	06	6	
Total	100	100	

**Table 4:** Distribution according to altered coagulation

Family History	No. of Patients	%
Bleeding Disorder In Family	1	1
Coagulopathy due to thrombocytopenia dengue fever	1	1
Coagulopathy due to malaria	1	1
Coagulopathy due to ITP	1	1
NAD	96	96
Total	100	100

**Table 5: Distribution according to Hemoglobin**

Hemoglobin	No. of Patients	%
>11.4	3	3
10-11.4 (Mild Anaemia)	32	32
7-9.9 (Moderate Anaemia)	59	59
<7 (Severe Anaemia)	6	6
Total	100	100

**Table 6: Distribution according to USG findings**

USG	No. of Patients	%
Bulky Ovary And PCOD	31	31
Isolated Single Ovary Cyst	19	19
Leiomyoma	2	2
Normal USG	44	44
Polyp	1	1
PID(Endometritis)	3	3
Total	100	100

**Table 7: Distribution according to PALM COEIN classification**

PALM COEIN	No. of Patients	%
AUB -P	1	1
AUB-A	0	0
AUB -L	1	1
AUB-M-	0	0
AUB-C	3	3
AUB-O	86	86
AUB -E	2	2
AUB-I	0	0
AUB- N	7	7

Here, 86% patients were in AU-O class followed by 7% in AUB-N, 3% in AUB-C, 0% in AUB-I, 1% in AUB-L and AUB-P class. According to palm 1% and coein 99%.

### Discussion

AUB is a common disorder in adolescent which leads to significant complication. It is one of the common causes of hospitalization in adolescent females. Menarche is a hallmark event in the life of adolescent girls it marks the transition from childhood to puberty. Most common presentation of abnormal uterine bleeding in adolescents is puberty menorrhagia. It is

defined as excessive bleeding occurring between menarche and 19 years of age.

Our study showed mean age of patients 16.08 years. Our results consistent with Singh et al [9]. we found mean age at which menarche start was 12.07 years with majority (75.5%) had start of menstruation at 13-15 years followed by 33.5% had start age of menstruation at 10-12 years and in only 1% patients' menstruation start between 16-19 years.

Distribution of patients according to duration of menstrual flow and we found that 73% patients had menstrual flow less than 3 days followed by 22% had flow greater than 5 days and 27% had flow

between 3-5 days. In consistent with this Chauhan et al [10]. Distribution according to complaints and we found that majority (31%) had heavy menstrual bleeding followed by 17% had pain abdomen, 16% had amenorrhea, 10% had vaginal discharge and 5% had dysmenorrhoea. In consistent with our results Singh et al [9]. Table: 3 shows the bleeding pattern and we found that 47% had infrequent heavy bleeding and 11% had infrequent light bleeding. In 4% had frequent heavy bleeding and 13% had frequent light bleeding. In 5% had irregular mild bleeding and 9% had irregular moderate bleeding and 5% had severe irregular bleeding. Only 6% had Intermenstrual Bleeding. majority of girls have an ovulatory menstruation during start of puberty. This results in abnormal pattern of bleeding for irregular duration. This problem ranges from spotting to profuse bleeding. Our results are comparable with Singh et al [9]. found that Majority of cases presented with heavy menstrual bleeding (68.95%). They also found that 6.89% had intermenstrual bleeding. Menstrual patterns were irregular in 39.65% cases. Cycle were frequent in 20.68% cases & infrequent cycle were present in 32.75% cases. Gautam et al [11]. Shows distribution according to hemoglobin and we found that majority of patients were anemic with 59% had moderate anemia followed by 32% had mild anemia, 6% had severe anemia and 3% had normal hemoglobin. Comparable to our results Singh et al [9]. also found that all of subject were anemic mild anaemia was present in 70.68% and 22.40% was moderately anaemic and 6.89% was severely anaemic. Mandal et al [12]. observed that 67% of the patients had menorrhagia for 6 months to 1 year and 63.5% of all patients had has hemoglobin level 10 gm % or less. Most of the cases of AUB in adolescent age group with severe anemia represent late because of inability to access amount of blood loss leading to severe anemia and later admission.

We found mean age at which menarche starts was 12.17 years with majority [76%] had starts of menstruation at 13 to 15 years followed by 34% had distribution of patients according to duration of menstrual flow and we found that 73% patients had menstrual flow less than 3 days followed by 27% had flow greater than 5 days and 22% had flow between 3-5 days.

Our study shows distribution according to complaints and we found that majority (47%) had heavy menstrual bleeding followed by 17% had pain abdomen, 16% had amenorrhea, 10% had vaginal discharge and 5% had dysmenorrhoea.

Our study findings are consistent with this Mandal et al [12]. where an ovulatory dysfunctional uterine bleeding (DUB) and polycystic ovarian disease (PCOD) were the two main etiological factors for puberty menorrhagia in their study responsible for 72% and 10.5% of the cases respectively. Six patients (3.0%) had idiopathic thrombocytopenic purpura (ITP) and 8.5% of the patients were hypothyroid. Genital tuberculosis was detected in 5 cases (2.5%) and one patient was diagnosed to have - von Willebrand disease. Singh et al [9]. found that ovulatory causes were most common in 80.98% cases, structural causes were present in 5.16% cases and coagulopathies were present in 3.44% cases of AUB. Laddad et al [13]. Our study findings are comparable to laddad et al. we observed in this study this 55-82% of adolescent had an ovulation post menarche due to HPO axis immaturity,

### Conclusion

The study concluded that Menorrhagia in adolescents can be caused by a number of conditions, the most common being the immature hypothalamic-pituitary-ovarian axis. Assessment of each case with thorough history, physical examination, and laboratory investigation is crucial in reaching the diagnosis. We see that we can successfully apply palm coein approach to

adolescent AUB. Anatomical abnormalities like fibroid or polyp are also to be ruled out.

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